

# News from the NCVP

FALL 2015

## SPECIAL POINTS OF INTEREST:

- Elanco Resident Dr. Kelsey Paras
- New clinical parasitologist at OSU
- Resident updates
- NCVP at
   WAAVP

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## **PEOPLE**



## NCVP Names Elanco Resident in Veterinary Parasitology



The NCVP is pleased to announce **Dr. Kelsey Paras** as the **Elanco Resident** in Veterinary Parasitology. Kelsey is a 2015 graduate of **The Ohio State University (DVM)**. Prior to attending veterinary

college she completed a BS (University of Delaware) and an MS (Oklahoma State University) in Entomology, and her career goals include working in academia and serving the needs of food animal producers and



veterinarians. Her graduate and residency training will be conducted at the **University of Georgia** under the direction of **Dr. Ray Kaplan** and will focus on parasites of cattle.

Congratulations, Kelsey - and welcome to the NCVP!

## Dr. Nagamori Hired as Clinical Parasitologist at OSU



Congratulations, Dr. Yoko Nagamori! Yoko recently accepted the Clinical Veterinary Parasitologist position at the Oklahoma Animal Disease Diagnostic Laboratory (OADDL) housed at Oklahoma State University (OSU). Dr. Nagamori will have big shoes to fill as she will be replacing clinical parasitologist Dr. Eileen Johnson, who retired in September 2015 (see article on page 4). Yoko is the NCVP Resident in veterinary parasitology, and although she will transition into a new role at OSU, she will complete her MS degree in May 2016 and sit for the Parasitology Board exam in December 2017.

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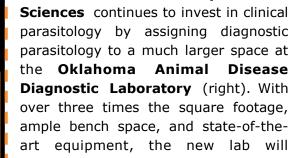
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Dr. Nagamori has a BS from Shizuoka University in Shizouka, Japan, a BA from Augustana College in Sioux Falls, South Dakota, and a **DVM** (2013) from **Iowa State University**, Ames, Iowa. Over the course of her veterinary career, Yoko has developed a **passion for diagnostic parasitology** that is unparalleled. We are pleased that she will continue to serve veterinary parasitology and NCVP at OSU, as her **excitement** and **enthusiasm** will undoubtedly resonate among the veterinary students, faculty, and referring veterinarians.

Dr. Yoko Nagamori, new clinical veterinary parasitologist at OSU, examines encysted Taenia taeniaeformis strobilocerci in a vole liver under a dissecting microscope to take photos.

# A New Home for Diagnostic Parasitology! The Oklahoma State University Center for Veterinary Health





accommodate our growing service and clinical research activities in parasitology. Renovations and equipment ordering are underway to insure we remain ready to meet **service** and **teaching needs** of veterinarians and parasitologists throughout North America. **Go Team Parasite!** 

#### 

Floor plans showing new diagnostic parasitology space at

#### What NCVP Residents Have Been Up to Lately



Dr. Nagamori wins OSU-BMBGSA award NCVP Resident **Yoko Nagamori** won **first place** in OSU's 12<sup>th</sup> Biochemistry and Molecular Biology Graduate Student Association (BMBGSA) Symposium on September 18, 2015 with her platform presentation entitled **"Retrospective review of centrifugal fecal flotation from 2 dog and 3 cat populations in central Oklahoma for** *Alaria* **spp. infections with <b>investigations into wildlife reservoirs."** Way to go, Yoko! Dr. Nagamori's graduate research, under the mentorship of Dr. Mason Reichard, Associate Professor of Parasitology at Oklahoma State University Center for Veterinary Health Sciences (OSU-CVHS) and Co-Director

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Above: An Alaria sp. egg recovered from a cat centrifugal fecal flotation as part of NCVP Resident Dr. Yoko Nagamori's research project. Yoko has a strong interest in Alaria, and has presented her research on the parasite nationally and internationally.

at Oklahoma State University, co-authored a summary of select American Association for Veterinary Parasitologists (AAVP) 2015 presentations with **Dr. Susan Little** (OSU-CVHS Regents Professor, Krull-Ewing Endowed Professor and NCVP Co-Director), which

of the NCVP, is focused on *Cytuaxzoon felis*. She is also very active in **wildlife parasitology** (prompting her *Alaria* spp. work) and **parasitology diagnostics**. During her NCVP residency, she trained under renowned Parasitologist Dr. Eileen Johnson at OSU's Oklahoma Animal Disease Diagnostic Laboratory (OADDL) and recently accepted the position as **Clinical Parasitologist** from which Dr. Johnson retired in September of this

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PRACTIC

Dr. Brian Herrin (pictured right), NCVP Affiliate, PhD candidate



was published in the September/October 2015 issue of **Today's Veterinary Practice**. The article, "American Association of Veterinary Parasitologists: Highlights from the **60**<sup>th</sup> Annual Meeting," featured brief summaries (with author permission) of several key



Above: Male and female Amblyomma maculatum. "Genetic Diversity of Amblyomma Species in the Southern United States" by Amanda Blom, DVM, PhD student at Oklahoma State University, was one of the AAVP presentation summaries featured in Dr. Herrin's TVP article.

clinically relevant presentations within the following categories: unusual parasites in unexpected places, increasing risk of parasites and vector-borne infections, previously unrecognized diversity of ticks in North America, and new and improved parasite diagnostic testing strategies. The article summarized a total of **12 presentations** and is intended to update practicing veterinarians not attending AAVP 2015 on some of the latest findings in parasitology.

Great work, Brian!

Right: NCVP
Residents (left to right) Drs.
Nagamori, Jessica
Rodriguez, Herrin, and Lindsay
Starkey attend
WAAVP 2015!



(continued from previous page) Several NCVP Residents shared their research at the World Association for the Advancement of Veterinary Parasitology (WAAVP) 2015 in Liverpool, UK! Drs. Brian Herrin, Yoko Nagamori, Jessica Rodriguez, and Lindsay Starkey attended the international symposium to present their research findings and to represent the NCVP! To read more about the NCVP at WAAVP, see the article on page 7 under EVENTS. Very exciting!

#### Renowned Clinical Parasitologist Dr. Eileen Johnson Retires



Right: Dr. Johnson (referred to affectionately as "Dr. J") prepares to examine parasites collected from various wildlife during a Zoo, Exotics, Wildlife Medicine (ZEW) wet lab at OSU.

Dr. Eileen Johnson is | widely known for her skillset and enthusiasm in veterinary parasitology. Indeed, samples have been sent to her from animal practitioners all over the seeking parasite | identifications and diagnoses.

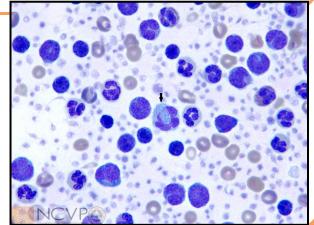
The field of Clinical Parasitology has gotten a little smaller with the retirement of **Dr. Eileen Johnson**, Associate Clinical Professor in Veterinary Parasitology at the Oklahoma State University Center for Veterinary Health Sciences (OSU-CVHS).



Dr. Johnson is a native of New Orleans, Louisiana, and moved to Stillwater, OK to earn her DVM from OSU, followed by her MS and PhD. She then went to the University of California, Davis, where she served as the diagnostic parasitologist for a number of years. Lucky for OSU, Eileen returned in 2006 and reinvigorated the diagnostic parasitology division of Oklahoma Animal Disease Diagnostic Laboratory (OADDL).

Below: A photomicrograph of a rare Hepatozoon americanum gamont in a blood smear taken by Dr. Johnson that is available in the NCVP image database.

Dr. Johnson is one of the leading researchers in the epidemiology of the causative parasite of American Canine Hepatozoonosis (ACH).



(continued from previous page). Dr. Johnson is a highly respected research scientist and is recognized for elucidating the route of transmission of the rickettsial agent causing Potomac Horse Fever and the role of Hepatozoon americanum cystozoites in the epidemiology of American She has authored Canine Hepatozoonosis. numerous peer-reviewed articles and presented research findings and diagnostic methods at numerous veterinary symposia. At OSU -CVHS, Dr. Johnson was also a highly valued **instructor** to 4<sup>th</sup> year veterinary students rotating through diagnostic curricula, 4th year preceptor students, and NCVP Residents.



In the photo above, Dr. Susan Little (right), OSU Regents Professor, Krull-Ewing Endowed Chair, and NCVP Co-Director expresses to Dr. Johnson during her retirement reception what a tremendous colleague and friend she has been, and how deeply she will be missed.



Above: A parasite-decorated cake (of course!) in honor of Dr. Eileen Johnson's retirement from OSU. Featured are important aspects of Hepatozoon americanum transmission, Dr. Johnson is widely recognized for her research on the emerging parasite.

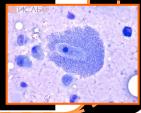
In addition to being a skilled veterinarian, sharp research scientist, and respected instructor, she is also a **talented artist** with an eye for detail. She generously shared with the NCVP her collection of parasite photos she has taken over the years... many of which are stunning and available in the **NCVP image database**. And let us not forget her extraordinary parasite pottery pieces!

To top it all off, Dr. Johnson is one of the kindest, sincerest, and most supportive individuals one could ever meet. Her retirement is well-deserved, but **she will be dearly missed** in many ways by OSU and NCVP people.

Photos in the NCVP image database contributed by Dr. Eileen Johnson. From left to right: an Anoplocephala sp. egg, a stained Dicrocelium dendtriticum adult, and a Cytauxzoon felis-laden macrophage.









Above: Inaugural NCVP
Residents Dr. Alice Lee
(right) and Dr. Lindsay
Starkey (left). Alice won the
2015 AAVP-CAPC Graduate
Student Award in Zoonotic
Disease, and presented her
work at AAVP 2015.
Congratulations, Alice!
Alice and Lindsay both
presented at AVMA and
AAVP 2015.



Above: NCVP project leader, Dr. Kelly Allen, lecturer and researcher at Oklahoma State University, talks to some AAVP attendees that stopped by the NCVP promotional table.

## **EVENTS**



#### NCVP Presence at AAVP-LIWC-ISEP 2015 in Boston

Once again, **NCVP representation** was solid at the annual **American Association of Veterinary Parasitologists (AAVP) 2015** meeting, which was held jointly with the 59<sup>th</sup> Livestock Insect Workers Conference (LIWC) and the 13<sup>th</sup> International Symposium of Ectoparasites of Pets (ISEP) in Boston, Massachusetts on July 11–14.

#### NCVP Member Awards and Accolades at AAVP

Two of our Residents received awards. Dr. Alice Lee, NCVP Novartis Resident, Cornell University, received the annual AAVP-CAPC Graduate Student Award in Zoonotic Disease for her work on *Dirofilaria immitis*, *Toxocara canis*, and *Toxoplasma gondii*. NCVP Resident at Oklahoma State University Dr. Yoko Nagamori placed second in the student poster competition among more than 25 contenders for her *Alaria* spp. research.

Also, NCVP Academic Board Member Dr. Mike Dryden, DVM, MS, PhD, DACVM in Parasitology, Kansas State University, aka Dr. Flea, was named the 2015 AAVP Distinguished Veterinary -Merial **Parasitologist** for his lifetime achievements in Parasitology. In the photo to the right, Dr. Dryden (right) proudly holds his award, alongside his wife Joan Dryden and Dr. Doug Carithers (Merial, AAVP Secretary/treasurer and NCVP Board Member).



Congratulations Drs. Dryden, Lee, and Nagamori!

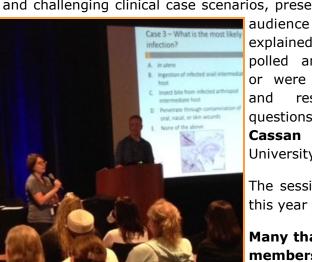
#### NCVP Table Popular Again at AAVP



The table at AAVP 2015 was again stocked with NCVP newsletters, brochures, Resident and research grant applications, and of course, various cool "swag." New temporary tattoos, new parasite videos on NCVP-branded jump drives, and custom parasite-stamped M&Ms (that's right, parasite M&Ms—see photo above) were all the rage. Thanks to everyone who stopped by the table to learn more about the NCVP!

#### NCVP Residents Host NCVP-AAVP Clicker Session

The NCVP and AAVP partnered again to present an interactive clinical case series as a fun closing event to the annual AAVP meeting. AAVP President **Dr. Andrew Peregrine** (Associate Professor of Parasitology at the University of Guelph, Ontario, Canada) was an outstanding **emcee** once again, and this year, the **NCVP Residents** were the presenters! Each Resident contributed interesting and challenging clinical case scenarios, presented them to





audience members, Above: Dr. Andrew Peregrine beexplained why popular gins the clicker session after Dr. Supolled answers were san Little thanks him for being such or were not correct, a "hilarious...yet kind" emcee.

questions and comments. In the photo to the left, **Dr. Cassan Pulaski**, Merck Resident at Louisiana State University, presents the third case in the clicker series.

The session was again a hit, and was extra enjoyable this year because of the Residents' enthusiasm!

Many thanks to the AAVP for hosting it and to the members staying to participate!

### The National Center goes International—NCVP at WAAVP 2015

responded

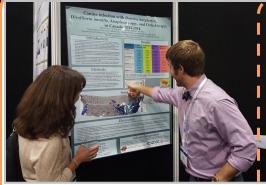
NCVP Residents Drs. Brian Herrin, Yoko Nagamori, Jessica Rodriguez, Resident graduate Dr. Lindsay Starkey, and NCVP Board members Drs. Byron Blagburn, Dan Snyder and Anne Zajac (a Keynote Speaker) presented at the World Association for the Advancement of Veterinary Parasitology (WAAVP) meeting held August 16–20 in Liverpool, UK. NCVP Board sponsor representatives also in attendance were Chris Adolph, DVM, MS of Zoetis and Dan Snyder, DVM, PhD, DACVM (Parasitology) of Elanco. NCVP academic Board member Dr. Dwight Bowman serves on the WAAVP Executive Committee and was also present for the meeting.

NCVP presentations at WAAVP 2015 are listed on the following page.

In the photo to the right, NCVP industry Board members **Drs. Chris Adolph** (right) and **Dan Snyder** (left) are excited to be at WAAVP 2015 to represent their companies and the NCVP.

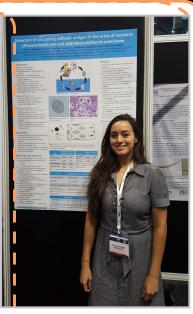


#### PAGE 8 / Events continued...





WAAVP 2015. Top left: Dr. Brian Herrin discusses his canine vector-borne infection survey data with Dr. Missy Beall of IDEXX. Top right: Dr. Jessica Rodriguez presenting her Heterobilharzia research during a poster session. **Bottom left: Dr. Anne** Zajac prepares to give her Keynote presentation. Bottom left: Dr. Lindsay Starkey presents her research on vector-borne pathogens in Haiti dogs.







#### **NCVP Member Research Presentations**

#### **NCVP Residents:**

- **Brian Herrin, DVM, PhD Candidate** (Oklahoma State University, NCVP Affiliate Resident) Canine infection with *Borrelia burgdorferi, Dirofilaria immitis, Anaplasma* spp., and *Ehrlichia* spp. in Canada, 2013–2014.
- Yoko Nagamori, DVM, MS Student (Oklahoma State University, NCVP Resident) Retrospective review of centrifugal fecal flotation findings from 2 dog and 3 cat populations in central Oklahoma, U.S.A. for *Alaria* spp. infections with investigations into wildlife reservoirs.
- Jessica Rodriguez, DVM, PhD Student (Texas A&M University, NCVP Merial Resident)
   Detection of circulating cathodic antigen in the urine of raccoons (*Procyon lotor*) infected with *Heterobilharzia americana*.
- **Lindsay Starkey, DVM, PhD** (Oklahoma State University, NCVP Bayer Resident who graduated May 2015) Prevalence of vector-borne pathogens in dogs from Haiti.

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#### **NCVP Board Members:**

**Byron Blagburn, MS, PhD, DACVM-Parasitology** (Auburn University College of Veterinary Medicine):

- A combination of imidacloprid and flumethrin (Seresto<sup>®</sup> Collar) prevents transmission of *Borrelia burgdorferi* (sensu stricto) and *Anaplasma phagocytophilum* from naturally infected ticks to dogs.
- Effects of shampooing, water, and sunlight on the efficacy of topical and systemic treatments against adult and immature fleas (*Ctenocephalides felis*) on dogs.

**Dan Snyder, DVM, PhD, DACVM-Parasit.** (Elanco) – Expanding horizons together (sponsor session).

**Anne Zajac, DVM, PhD, DACVM-Parasitology** (Virginia/Maryland College of Veterinary Medicine):

- Evaluation of entering cattle fecal egg counts and weights as indicators of response to deworming in a backgrounding operation.
- **Keynote Presentation** Establishing a Veterinary Parasitology Specialty? The North American Experience.

#### Student Parasit. Club/AAVPers Embrace their Inner Picasso

Once again, veterinary students at **Oklahoma State University Center for Veterinary Health Sciences**(OSU-CVHS) showed off their artistic sides with parasites as muse. **Dr. Eileen Johnson** (see article on page 4) and **Dr. Anne Barrett** (parasitologist at OSU-CVHS, Department of Veterinary Pathobiology), both avid potters, provided the materials and means for **student Parasitology Club** and **AAVP members** to create their own parasite-ornamented clay wall tiles. Over 20 students and several instructors participated in the work shop. The collection will be **permanently** 



displayed in a collage on the wall facing the entrance of McElroy Hall at OSU-CVHS, where

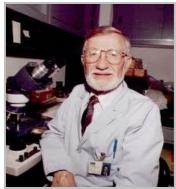


other notable and unique pieces honoring veterinary medicine are on exhibition. How cool is that? Thanks to Drs. Barrett and Johnson for facilitating the session, and to all of the students and instructors helping to create the masterpiece.

#### **Events continued...**

### NCVP Annual Fall 2015 In-Person Meeting in Stillwater, OK

NCVP academic Board members, industry sponsor representatives, and NCVP Residents convened in Stillwater, OK on October 28–29 for the Annual Fall 2015 in-person meeting. Resident updates on progress, Resident training opportunities, the small grants program, and NCVP collaborations were discussed. After a full day, NCVP members, Residents, and Oklahoma State University Veterinary Students enjoyed a Keynote presentation by Sidney Ewing, DVM, MS, PhD, Emeritus Professor of Parasitology and internationally recognized research scientist (pictured right), over dinner at Brooklyn's in downtown Stillwater.





A celebrity guest (left—Pistol Pete!) dropped in to greet our own celebrity Dr. Ewing, as well as those in attendance, and to thank NCVP academic and industry Board members for their continued involvement in and support of the Center. The next day, Board members met while NCVP **Residents** underwent **Good Clinical Practice** (GCP) training led by **Dr. Dan Snyder**, Senior Research Advisor at Elanco Animal Health Research and Development and NCVP industry sponsor representative.

After the meeting, the Residents stayed for **Media Training**, a work-shop designed to prepare professionals for public speaking in the face of the Media, and to participate in **review sessions** led by instructors at Oklahoma State University Center for Veterinary Health Sciences (OSU-CVHS). Eileen Johnson, DVM, MS, PhD, Associate Clinical Professor, reviewed **internal and external** parasites, Melanie Breshears, DVM, PhD, ACVP Diplomate, Associate Professor of Anatomic Pathology, trained Residents on **parasites in histologic preparations**, and Dr. Jim Meinkoth, DVM, PhD, ACVP Diplomate, Professor of Anatomic Pathology, reviewed **parasites of the blood**.

#### **About the National Center for Veterinary Parasitology**

Veterinary parasites impact human health and society in many ways. With the generous support of our sponsors, the National Center for Veterinary Parasitology works to promote greater understanding and control of parasitic diseases in animals through innovative partnerships between academia and industry. Housed in the Center for Veterinary Health Sciences at Oklahoma State University, the center strives to create future generations of veterinary parasitologists, conduct targeted research, and provide diagnostic and consulting services worldwide. To learn more, please visit <a href="https://www.ncvetp.org">www.ncvetp.org</a>.















Center for Veterinary Health Sciences
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## CVP Selected Publications from NCVP Members

Our residents, faculty, and board members are a busy group. Below is a very abridged list of just a few of the recent publications from NCVP members (names of board members and residents are bolded). To request the full list or individual reprints, please send an email to <a href="mailto:ncvp@okstate.edu">ncvp@okstate.edu</a>. Most importantly if you have suggestions for future continuing education articles, review papers, or topics you think would be of interest to veterinarians and others in parasitology, please send us your suggestions.

#### 2015 TO DATE...

**Little S, Adolph C**, Downie K, Snider T, **Reichard M**. 2015. High prevalence of covert infection with gastrointestinal helminths in cats. *J Am Anim Hosp Assoc*. 51(5):359-64.

**Bowman D**, Charles SD, Arther RG, Settje T. 2015. Laboratory evaluation of 10% imidacloprid + 2.5% moxidectin topical solution (Advantage<sup>®</sup> Multi, Advocate<sup>®</sup>) for the treatment of *Dirofilaria immitis* circulating microfilariae in dogs. *Parasitol Res*. 114 Suppl 1:S165-74.

**Lee AC**, Epe C, **Bowman DD**. 2015. Determination of anthelmintic efficacy against *Toxocara canis* in dogs by use of capsule endoscopy. *Vet Parasitol*. 212(3-4):227-31.

Hackworth CE, Eshar D, Lindemann DM, **Dryden MW**. CLINICAL CHALLENGE. Diagnosis: *Mesocestoides* spp. 2015. *J Zoo Wildl Med.* 46(3):657-9.

Ohmes CM, **Hostetler J**, Davis WL, Settje T, McMinn A, Everett WR. 2015. Comparative efficacy of an imidacloprid/flumethrin collar (Seresto<sup>®</sup>) and an oral fluralaner chewable tablet (Bravecto<sup>®</sup>) against tick (*Dermacentor variabilis* and *Amblyomma americanum*) infestations on dogs: a randomized controlled trial. *Parasitol Res.* 114 Suppl 1:S95-108.

Ohmes CM, **Hostetler J**, Davis WL, Settje T, Everett WR. 2015. Comparative efficacy of an imidacloprid/flumethrin collar (Seresto<sup>®</sup>) and an oral afoxolaner chewable (NexGard®) against tick (*Dermacentor variabilis* and *Amblyomma americanum*) infestations on dogs: a randomized controlled trial. *Parasitol Res.* 114 Suppl 1:S81-94.

Rust MK, Vetter R, Denholm I, **Blagburn B**, Williamson MS, Kopp S, Coleman G, **Hostetler J**, Davis W, Mencke N, Rees R, Foit S, Böhm C, Tetzner K. 2015. Susceptibility of adult cat fleas (Siphonaptera: Pulicidae) to insecticides and status of insecticide resistance mutations at the rdl and knockdown resistance loci. *Parasitol Res.* 114 Suppl 1:S7-18.

**Dryden MW**, Smith V, Bennett T, Math L, Kallman J, Heaney K, Sun F. Efficacy of fluralaner flavored chews (Bravecto) administered to dogs against the adult cat flea, *Ctenocephalides felis felis* and egg production. 2015. *Parasit Vectors* 8:364. Erratum in *Parasit Vectors* 8:405.

**Carithers D**, Everett WR, Gross SJ, Solanki R. 2015. Efficacy of a proprietary formulation of fipronil/(S)-methoprene/cyphenothrin against *Ixodes scapularis* tick infestations on dogs. *Parasit Vectors*. 8:379.

**Dryden MW**, Smith V, Chwala M, Jones E, Crevoiserat L, McGrady JC, Foley KM, Patton PR, Hawkins A, **Carithers D**. 2015. Evaluation of afoxolaner chewables to control flea populations in naturally infested dogs in private residences in Tampa FL, USA. *Parasit Vectors*. 8:286.

Hayes B, Schnitzler B, Wiseman S, **Snyder DE**. 2015. Field evaluation of the efficacy and safety of a combination of spinosad and milbemycin oxime in the treatment and prevention of naturally acquired flea infestations and treatment of intestinal nematode infections in dogs in Europe. *Vet Parasitol*. 207(1-2):99-106.

Reichard MV, Criffield M, Thomas JE, Paritte JM, Cunningham M, Onorato D, Logan K, Interisano M, Marucci G, Pozio E. 2015. High prevalence of *Trichinella pseudospiralis* in Florida panthers (*Puma concolor coryi*). *Parasit Vectors*. 8:67.

Rizzi TE, **Reichard MV**, Cohn LA, Birkenheuer AJ, Taylor JD, Meinkoth JH. 2015. Prevalence of *Cytauxzoon felis* infection in healthy cats from enzootic areas in Arkansas, Missouri, and Oklahoma. *Parasit Vectors*. 8 (1):13.

Varloud M, Fourie JJ, **Blagburn BL**, Deflandre A. 2015. Expellency, anti-feeding and speed of kill of a dinotefuran-permethrin-pyriproxyfen spot-on in dogs weekly challenged with adult fleas (*Ctenocephalides felis*) for 1 month-comparison to a spinosad tablet. *Parasitol Res.* 2015 Apr 15.

Rosypal AC, Houk AE, **Zajac AM**, Lindsay DS. 2015. Prevalence of IgG antibodies to *Toxoplasma gondii* in veterinary and undergraduate students at Virginia Tech, Blacksburg, Virginia. *Zoonoses Public Health*. 2015 Mar 6.

Bowdridge SA, **Zajac AM**, Notter DR. 2015. St. Croix sheep produce a rapid and greater cellular immune response contributing to reduced establishment of *Haemonchus contortus*. *Vet Parasitol*. 208(3-4):204-10.

Bourguinat C, **Lee AC**, Lizundia R, **Blagburn BL**, Liotta JL, Kraus MS, Keller K, Epe C, Letourneau L, Kleinman CL, Paterson T, Gomez EC, Montoya-Alonso JA, Smith H, Bhan A, Peregrine AS, Carmichael J, **Drake J**, Schenker R, Kaminsky R, **Bowman DD**, Geary TG, Prichard RK. 2015. Macrocyclic lactone resistance in *Dirofilaria immitis*: Failure of heartworm preventives and investigation of genetic markers for resistance. *Vet Parasitol*. Apr 13.

Otranto D, Giannelli A, Latrofa MS, Dantas-Torres F, Trumble NS, Chavkin M, Kennard G, Eberhard ML, **Bowman DD**. 2015. Canine Infections with *Onchocerca lupi* Nematodes, United States, 2011-2014. *Emerg Infect Dis*. 21(5):868-71.

Herd HR, Sula MM, **Starkey LA**, Panciera RJ, **Johnson EM**, Snider TA, Holbrook TC. 2015. *Sarcosystis fayeri*-induced granulomatous and eosinophilic myositis in two related horses. *Vet Pathol*. In press.

Paddock CD, Dension AM, **Dryden MW**, Noden BH, Lash RR, Abdelghani SS, Evans A, Ganta RR, **Little SE**. 2015. High prevalence of "*Candidatus* Rickettsia andeanae" and apparent exclusion of *Rickettsia parkeri* in adult *Amblyomma maculatum* (Acari: Ixodidae) from Kansas and Oklahoma. *J Med Entomol*. 6(3):297-302.

**Little SE**, **Hostetler JA**, **Thomas JE**, Bailey KL, Barrett AW, Gruntmeir K, Gruntmeir J, **Starkey LA**, **Blagburn BL**. 2015. Moxidectin steady state prior to inoculation protects cats from subsequent, repeated infection with *Dirofilaria immitis*. *Parasit Vectors*. 8:107.

**Starkey LA**, Barrett AW, Beall MJ, Chandrashekar R, Thatcher B, Tyrrell P, **Little SE**. 2015. Persistent *Ehrlichia ewingii* infection in dogs. *JVIM*. In press.

Barrett AW, Noden BH, Gruntmeir JM, Holland T, Mitcham JR, Martin JW, **Johnson EM**, **Little SE**. 2015. County scale distribution of *Amblyomma americanum* in Oklahoma: addressing local deficits in tick maps based on passive reporting. *J Med Entomol*. In press.

**Drake J,** Gruntmeir J, Merritt H, **Allen L, Little SE**. 2015. False negative antigen tests in dogs infected with heartworm and placed on macrocyclic lactone preventives. *Parasit Vectors*. 8:68.

